

عنوان مقاله:

Experimental and Modeling Technique for Liquid Holdup between Spherical Particles

محل انتشار:

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خلاصه مقاله:

The experimental model is presented to investigate the liquid bridge formed in liquid between two spherical particles. Also, the prediction of the maximum volume of liquid holdup between two spherical particles with respect to particle size, liquid characteristics, and body force is one of the objectives of this paper. In order to calculate the volume of the liquid bridge, the previous methods used a combination of the variables such as filling angle, interface curvature, and the liquid bridge neck diameter for measurement. However, the filling angle and interface curvature are difficult to measure in practice. In this paper, some equations from previous publications are transformed into functions of a single variable, which is the ratio between liquid bridge neck diameter and particle size. Then a comparison is made between the result based on these equations and some experimental results. It is also assumed that the liquid contact angle is zero and the Maple computer software was adopted to modeling. The main difference between the current research and the previous ones is that the gravity effect is not neglected and hence it might be applicable to centrifugal processes.

کلمات کلیدی:

Liquid holdup, Liquid bridge, Contact angle, Maple software, Gravity effect

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